MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM

NR Eligible: yes ____
no ____

Property Name: Test Facility - Building E3728 Inventory Number: HA-2203

Address: Edgewood Area, Aberdeen Proving Ground Historic district: ____ yes X no

City: Edgewood Area, Aberdeen Prov Zip Code: 21010 County: Harford

USGS Quadrangle(s): Edgewood

Property Owner: U.S. Army Garrison, APG, Department of the Army, DoD Tax Account ID Number: N/A

Tax Map Parcel Number(s): N/A Tax Map Number: N/A

Project: ____ Agency: U. S. Army Garrison, APG

Agency Prepared By: R. Christopher Goowdin & Associates, Inc

Preparer's Name: Roger Ciuffo Date Prepared: 4/6/2010

Documentation is presented in: ____

Preparer's Eligibility Recommendation: ____ Eligibility recommended X Eligibility not recommended

Criteria: ___A ___B ___C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G

Complete if the property is a contributing or non-contributing resource to a NR district/property:

Name of the District/Property: ____

Inventory Number: ____ Eligible: ____ yes Listed: ____ yes

Site visit by MHT Staff ____ yes X no Name: ____ Date: ____

Description of Property and Justification: *(Please attach map and photo)*

Building E3728 (old number 346) was constructed in 1943 as an experimental pilot chemical munitions loading and filling plant at a cost of $61,400.00. Located at the junction of 57th Street and Beach Point Road, the one-story building is 41'4" x 52'6" x 14' 7" on the main floor with an off-set that measures 5'8" x 11'8" x 7'3" and an addition that is 9'10" x 36'8" x 13'; total square footage is 2,596 (APG DPW real property records). This building was one of three pilot filling plants constructed during World War II and located southwest of King's creek and north of Beach Point Road; the nearby filling plants included Building E3724 (old number 344) and Building E3726 (old number 345) (EAI Corporation).

E3728 rests on a concrete foundation, has concrete floors, and has interior load-bearing masonry walls. A concrete loading dock spans the west and north elevations. The exterior was refinished with exterior insulation and finishing system (EIFS) in 1991. The roof is composed of two shed sections separated by a central trough. A massive parapet protrudes from the roof at the center of the north wall. Parapet walls, visible along the side elevations, project above the roof line. The roofing is asphalt shingle. The north elevation has centrally-located, paired metal doors and two fixed windows to the left of the entry doors. A shed-roof porch, supported by square wood posts, protects the entry from the elements. The porch was installed in 1962. Metal pipe railing was installed along the concrete loading platform on the building's west elevation in 1972 (APG DPW drawing files). The east

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[signature] 06/04/2010

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elevation contains a protruding, shed-roof addition built in 1962 that contains metal entry doors on each end with an off-set overhead metal roll door. A one-bay, shed-roof, utility room is located south of the 1962 addition on the building's east elevation. The utility room contains a center entry metal door. The building's south elevation contains an overhead steel roll-up door on the southwest corner with a row of three fixed-pane windows to the west and a set of paired steel doors on the southeast corner. The west elevation contains four bays, which are divided by three projecting brick walls. Three bays contain single steel doors. The end bay contains two fixed windows.

Building E3728 originally was constructed as a pilot munitions loading and filling plant. The original drawings were prepared by Whitman, Requardt, and Smith, Engineers, of Baltimore, Maryland. The design of the building has interior brick load-bearing walls that outline three former filling chambers on the west side of the building and two chambers on the east side; the load bearing walls project above the roof line. The exterior walls on the west, north, and east elevations originally were clad with horizontal boards of 7/8" "cello siding," a grandular-surfaced siding produced by the Celotex Company (APG DPW drawing files). Each filing chamber was accessed only from the exterior; the original exterior doors were paired, wood-paneled units with single glass lights. On the interior, the rooms were separated by a central corridor that was accessed only from the north and south elevations. The shed-roof section on the south elevation was a machine shop. The south elevation was constructed of structural clay tile and originally contained two sets of paired, wood-panel doors with single glass lights and three, wood-frame, one-over-one-light, double-hung sash windows. A one-story utility room was located on the east elevation near the southeast corner of the building (APG DPW drawing files).

Between 1943 and 1962, Building E3728 was used to load special lots of small munitions, the largest of which was 4.2" chemical mortar rounds. Loading activities included high explosives, inert materials, white phosphorous, and E130R4 bomblets used in the Honest John, Little John, and Sergeant missiles (EAI Corporation). Individual loading cubicles with individual doors into the loading cells remain visible along the west side of the building.

In 1962, filling operations in the building ceased, and the building was reconfigured for use as an experimental biological test chamber. Renovations that accompanied the change in use included the construction of an addition measuring 9' x 35' along the east wall. The exterior of the new east wall was clad with gypsum board. The new addition accommodated a metal test chamber 10' in diameter and 10' in height and was accessed by a large overhead door. The northern chamber was converted into a laboratory with windows. A doorway was installed between the new laboratory room and the corridor, which was reconfigured to contain a vestibule, shower and toilet area, an air lock, and a changing room. The porch along the north elevation of the building also was added in 1962 (APG DPW drawing files). Biological testing in Building E3728 occurred from 1962 until 1964 (EAI Corporation).

In 1965, the use of the facility was changed to an experimental chemical test chamber to test the dissemination of a variety of chemicals. Chemicals tested in the dissemination chamber included riot control and incapacitating agents, as well as nerve agents (EAI Corporation). The dissemination chamber operated until the 1990 (EAI Corporation).

Alterations to Building E3728 occurred approximately once per decade between 1970 and 1990. In 1972, the original doors were replaced with the current metal door units with acrylic plastic glazing and metal mesh coverings. In 1991, the wood windows were replaced with the current metal-frame units. The windows along the south elevation were shortened and the upper window openings were infilled. The entire exterior was resurfaced with EIFS. New roofing also was installed (APG DPW drawing files).

Between 2000 and 2005, the building was renovated again. During that interior renovation, new sheet rock was installed and painted; restrooms were refurbished; computer and telephone lines were installed; and, new tiled flooring was installed in the laboratory (APG, real property records memo dated 13 September 2005).

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Historic Context

Edgewood Arsenal was founded in 1917 as the first chemical warfare production facility in the United States. The installation was established in response to the appearance of toxic gas weapons on the European battlefields. Because commercial chemical companies were reluctant to invest in such weapons, the U.S. government decided to build its own industrial production plant. Edgewood Arsenal remained the only chemical warfare installation in the U.S. until World War II, when three other chemical warfare production plants were established. Edgewood Arsenal continued as the headquarters of the expanded chemical warfare program and the center for specialized and experimental tasks (Cannan et al. 1995).

Edgewood Arsenal originally was named the U.S. Filling Plant, Gunpowder Reservation. The central core of the installation was designed as an integrated production line to accommodate the multi-step process of chemical weapons manufacturing. The installation included an area to receive shipments of and produce raw materials; an area to produce chemicals; an area to pack chemicals into shells; and, an area to load, store, and ship chemical ordnance.

After World War I, Edgewood Arsenal remained a permanent installation, but at a much reduced level of activity. The National Defense Act of 1920 established the Chemical Warfare Service as a separate entity, distinct from the Ordnance Department. However, a general abhorrence for chemical warfare as practiced during World War I limited the role of this new service. In 1924, the Chemical Warfare Service was confined to studying defensive measures and equipment and to preparing a modest deterrent or retaliatory capability; the U.S. would not develop chemicals as an offensive measure (Brophy 1959a:21 23).

Within this framework, Edgewood Arsenal served as the center of Chemical Warfare Service activity. Workers at Edgewood tested methods for dispersing chemical agents from aircraft or from chemical mortars. They also developed improved gas masks and the means of impregnating clothing for protection against toxic gases. Stocks of chemical agents that remained from World War I were stored at Edgewood, but the production facilities were mothballed and, in some cases, dismantled. The Chemical Warfare School, which trained both Army and Navy personnel, also operated at Edgewood (Brophy 1959a:28 31).

As the possibility of war increased between 1939 and 1941, facilities at Edgewood were placed on standby status. Old production plants were repaired and manufacturing equipment was updated. Experimental chemical plants were constructed. Additional laboratory and office space was required to consolidate research activities expanded during the war. The area east of Ricketts Point Road was selected as the location of the new research and testing buildings. This location had enough space to build new up-to-date laboratories and support facilities to accommodate all staff in a few buildings.

As the buildings and facilities at Edgewood Arsenal were expanding, the administrative structure of the Chemical Warfare Service was reorganized in 1940 into the following divisions: Executive, Information, Fiscal, Operations, Training and War Plans, Personnel, Procurement, Supply, and Technical. The Technical Division originally administered all research and development work undertaken in the chemical warfare field, including all offensive and defensive phases, as well as medical and biological phases (Army Service Forces 1946:3). In 1941, the Technical Division was organized in the following areas: Research, Development, Engineering, Special Assignments, and Information. As World War II progressed and the research requirements expanded, the Technical Division's staff grew from 300 to 2,400 persons supported by an $8 million budget. In spring 1943, the medical and biological research and development functions were removed from the Technical Division, and a new Medical Division and Special Projects Division was organized (Army Service Forces 1946:3).

During World War II, Edgewood fulfilled more chemical functions than it had undertaken during World War I. President Roosevelt declared that the U.S. would not use chemical weapons offensively, but would retaliate with their use defensively. This

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deterrent capability had its desired effect; the Axis powers never resorted to the use of toxic gases on military targets (Grandine et al. 1982; Smart 1994).

Edgewood Arsenal, however, was prepared, although the nature of the industrial mission at the installation changed as the post no longer functioned as an integrated chemical production line. The bulk of chemical warfare production was shifted to other installations, including Huntsville/Redstone Arsenal (1941), Alabama; Rocky Mountain Arsenal (1942), Colorado; and, Pine Bluff Arsenal (1943), Arkansas. Edgewood Arsenal became the center for specialized and experimental tasks, such as the establishment of pilot plants to test new chemicals and new production processes.

The shift in mission resulted in a smaller number of self-contained production plants constructed at Edgewood Arsenal. Production lines were either housed in one building or in a series of separate buildings, each containing a different step in the production process. Instead of the entire installation functioning as an integrated industrial plant, each manufacturing process functioned independently. Older production facilities were dismantled or demolished while new plants were constructed wherever space was available.

Under the Technical Command, Edgewood Arsenal also conducted proof tests for preliminary and final engineering, user, and field tests for chemical weapons, munitions, agents, protective equipment, and other chemical warfare materiel. Personnel initiated test programs and developed field techniques and field operating procedures. The purpose of the testing program was to undertake comparative evaluation and analysis and to publish test results (Brophy and Ross 1953). Facilities that supported this work included experimental munitions loading and filling buildings, including E3728 and the other buildings in the E3700 block, and indoor testing facilities, such as test chambers for aerosols, environmental chambers, and a vertical wind tunnel. These types of facilities were located east of the Technical Command's main building E3330.

The Cold War era generally is defined as the period beginning in 1946 that followed Soviet activities to retain territory liberated from Nazi Germany during World War II and extended to the fall of the Berlin Wall in 1989. This period was marked by a tense, hostile relationship between the Warsaw Pact countries led by the U.S.S.R. and the North Atlantic Treaty Organization (NATO) Allies led by the U.S.A. The primary role of the U.S. Army during this time was to support U.S. policies of peace through strength by maintaining ground force readiness as an alternative to strategic nuclear weapons for deterring communist expansion (USAEC 1997).

The Cold War era was marked by major organizational changes in the armed forces and was accompanied by competition for limited military appropriations among the services. Under the 1947 National Security Act, the Army assumed responsibility for conducting land warfare, providing troops for occupation duty in Central Europe, and providing air defense units within the continental U.S.

The Cold War era also was marked by significant changes in U.S. Army operations. Instead of relying on a small standing army and mobilizing troops as needed, Army personnel were now ready to enter combat on short notice. This meant that a large, trained standing army was maintained in constant readiness. Troops were stationed for the first time in friendly foreign nations under an allied command structure. Within the U.S., the Army maintained an active force prepared to deploy quickly into combat zones (USAEC 1997).

In 1951, Edgewood Arsenal (Army Chemical Center) became the Research & Engineering Center for the Chemical Corps. In 1962, the Army's technical services were disbanded, and the Army Materiel Command (AMC) was established. This new command consolidated logistical functions to ensure integrated materiel management, including new product development, management of materiel stockpiles, testing, and technical and maintenance support (USAEC 1997). The Ordnance Department

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and the Chemical Corps activities at APG were transferred to AMC. In 1962, the Chemical Corps was abolished, and the laboratories and production facilities were placed under the Chemical – Biological – Radiological Agency (CBR Agency). In 1983, the name changed to Chemical, Research and Development Center (CRDC). In 1986, the name was changed once again to the Chemical Research, Development and Engineering Center (CRDEC). In 1992, the Edgewood Research, Development and Engineering Center was placed under the U.S. Army Chemical and Biological Defense Command (CBDCOM). In 1998, CBDCOM became absorbed by the Soldier and Biological Chemical Command (SBCCOM) (Smart 1997). The most recent reorganization and name change took place in 2002, when the U.S. Army Research, Development and Engineering Command (RDECOM) was created.

The chemical laboratories located at Edgewood conducted both basic research and materiel development. The laboratories focused on the development of chemicals as tactical weapons and on defensive measures to counter chemical weapons attack. Basic research included the discovery and development of new chemical agents, incendiaries, and screening and signaling smokes. Materiel development focused on improved weapons delivery and dispersal systems, including flame throwers, chemical mortars, and smoke generators. By 1953, the 4.2" chemical mortar developed by the Chemical Corps became a standard infantry weapon. In addition, the laboratories conducted research into the development of insecticides, rodenticides, and fungicides, as well as tear gas, non-lethal riot control agents, nerve agents, and defoliants (Brophy and Ross 1953; Smart 1994).

Evaluation

Building E3728 has a total of 2,596 square feet and was constructed in 1943 as a pilot chemical munitions loading and filling plant. In 1962, the building was renovated to accommodate an explosive test chamber for testing of biological materials, but was only used for that purpose for approximately two years. From the mid-1960s until the late 1970s, the building was used as a chemical dissemination testing chamber for riot control, incapacitating agents, and non-persistent nerve agents. During the 1980s, the building was used for small-scale detonation or ignition of various military and non-military materials (EAI Corporation).

Building E3728 does not appear to meet the qualities of significance and integrity to merit consideration for inclusion in the National Register of Historic Places. The building is indistinctive and exhibits substantial alterations from its original appearance. Associations with an event important in the past (Criterion A) or a person important in the past (Criterion B) have not been identified. The building does not embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or, possess high artistic value (Criterion C). The building is unlikely to yield information important to prehistory or history (Criterion D). Therefore, Building E3728 is recommended as not possessing the qualities of significance necessary for listing in the National Register of Historic Places.

References

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n.d. Real property records and drawing files available at Directorate of Public Works, Aberdeen Proving Ground, Aberdeen, Maryland.

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EAI Corporation
1989-96□ Record Search and Assessment for Edgewood Arsenal Buildings. A multi-volume series of reports prepared for U.S. Army Chemical Research, Development and Engineering Center, Aberdeen Proving Ground, Maryland.

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1994□U.S. Army Chemical Research, Development and Engineering Center: Historical Highlights. U.S. Army Chemical Research and Biological Defense Command, Aberdeen Proving Ground.

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1991a□Bulletin 16A: Guidelines for Completing National Register of Historic Places Forms. National Park Service, Washington, D.C.
1991b□Bulletin 15: How to Apply the National Register Criteria for Evaluation. National Park Service, Washington, D.C.

U.S. Army Service Forces, Office of the Chief, Chemical Warfare Services
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U.S. Army Research Development and Engineering Command (RDECOM)
Various Dates□Vertical Building Files.

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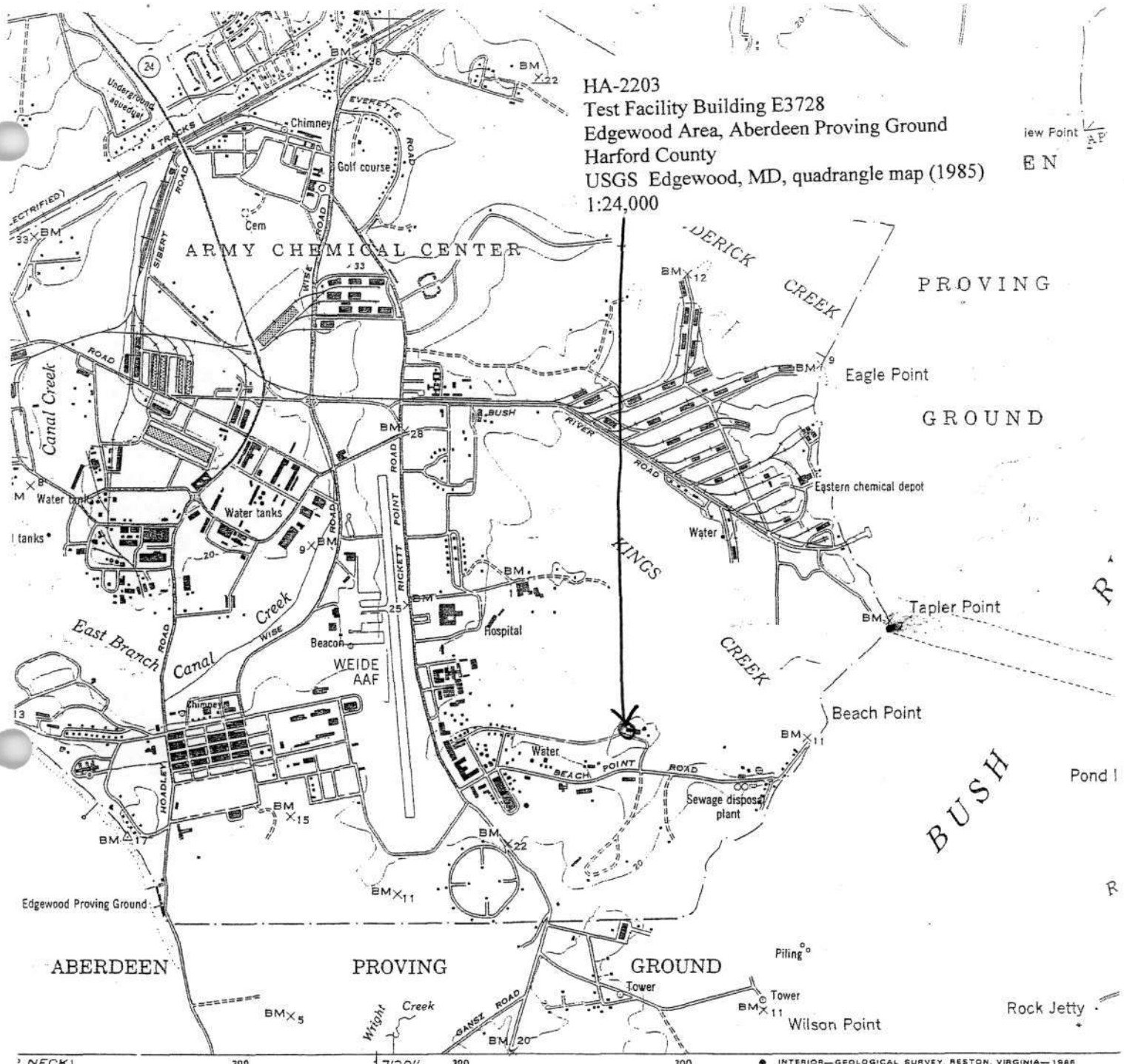

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